

# Enhanced-safety industrial radio remote control for use in explosible atmosphere

XD Series



Typical applications in chemical, petrochemical, pharmaceutical, sugar, grain and iron industries:

## Industrial equipment

- Silos
- Hoppers
- Dust removers
- Grinding mills
- Conveyors
- Dryers
- Boiler plants
- Mixers
- Grinding machines
- Smoothing, sifting
- Loading arms
- Conveyor belts

## Industrial vehicles

- Transportation of bulk products (fluids, powders)
- Sanitation
- Gaz transport

## Industrial lifting

- Travelling cranes, gantry cranes
- Monorails, hoists, jib cranes



## 1- Description

### ■ A radio remote control provides numerous advantages:

- Large freedom of movement
- Easy to use
- Precise, quality manoeuvres
- Visibility
- Productivity

### ■ To meet the requirements for use in explosible atmospheres, JAY Electronique has developed a new line of radio remote controls: the XD series, designed for use in zone 1 and 2 explosible atmospheres and zone 21 and 22 dust explosible atmospheres.

With the XD radio remote controls, Jay Electronique provides solutions to the broad range of enhanced-safety industrial applications implementing button controls. By its modular design, Jay electronique's XD system integrates a number of features in terms of:

- Number of function buttons
- Type of function buttons
- Position of function buttons
- Number of output relays
- Programming of relay / buttons assignments

### ■ Special attention has been given to ensure operator comfort through the following features:

- Ergonomic transmitters enabling one-hand control
- Control button accessibility
- Button touch sensitivity
- Identification of controlled functions
- Light-weight compact transmitters
- Transmitter endurance, and fast, easy to replace plug-in battery pack
- Adaptability to all radio configurations of the environment by possibility for changing frequency by a trained operator
- Mechanical protection of function buttons to avoid any unintentional action

### ■ To further enhance safety when using this equipment, technical solutions and innovative options are also proposed:

- Access is enabled by electronic key to an authorised operator only

### ■ Easy maintenance:

- Customization entirely stored in electronic key
- Diagnostic aid indicator lights

## C O N T E N T S

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### ● Products compliant with European directives:

- Manufacturer ATEX 94/9/CE LCIE certificate
- Machinery Safety stop, Cat. 3 per EN954-1
- Microwave equipment and telecommunication terminals (low voltage, electromagnetic compatibility, radio spectrum) ART certificate



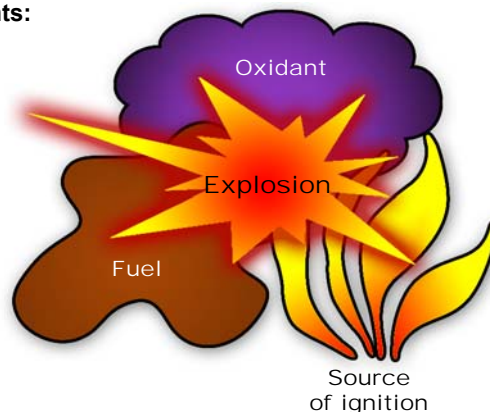
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## 2- Definition of a potentially explosive atmosphere

### 2.1 How an explosion happens

An explosion is formed by an association of the following 3 elements:

- An oxidant: in our case, the oxygen in the air.
- A fuel:
  - ♦ A gas (methane, acetylene, ...)
  - ♦ A fume (gasoline, solvent, ...)
  - ♦ A dust (wood, sugar, grain, ...)
- A source of ignition:
  - ♦ An electric arc
  - ♦ A mechanical spark
  - ♦ A high temperature



### 2.2 Consequences of an explosion

Explosions are responsible every year for around 6 deaths and 387 persons with permanent disability (PD) out of 379 accidents. These can produce major catastrophes, such as the explosion at the «AZF» plant at Toulouse (France) in 2001 or the «Blaye silo» near Bordeaux (France) in 1997, resulting in a large number of deaths and injuries, and destruction of the sites.

### 2.3 Protection against explosions

It is necessary to evaluate the specific hazards created by explosible atmospheres, keeping in mind:

- ♦ the probability that **explosible atmospheres** will occur and persist,
- ♦ the probability that **sources of ignition**, including **electrostatic discharges**, are present and will become active and effective,
- ♦ the **installations, substances and methods used**, and their possible **interactions**,
- ♦ the extent of the **foreseeable consequences**.

**The explosion hazards must be evaluated globally.**

In practice, this requires:

- Identification of zones representing a hazard and substances which could create explosible atmospheres.
- Classification of the explosive atmospheres in zones where there is an explosion hazard, assisted if necessary, by an outside organization.
- Definition of the equipment required to carry out the project.

With reference to user ATEX directive 99/92/CE.

**The zones are standardised in accordance with their degree of dangerousness.**

- Definition of explosion hazard zones linked to:

#### GASES, FUMES AND FOG

ZONE 0: location where an explosive atmosphere, consisting of a mixture with the air of combustible material in the form of gases, fumes or fog, is present continuously or over extended periods of time, or frequently.

ZONE 1: location where an explosive atmosphere, consisting of a mixture with the air of combustible materials in the form of gases, fumes or fog, is likely to form occasionally under normal operation.

ZONE 2: location where an explosive atmosphere, consisting of a mixture with the air of combustible materials in the form of gases, fumes or fog, is not likely to form during normal operation, or should such a formation occur, is nonetheless only of short duration.

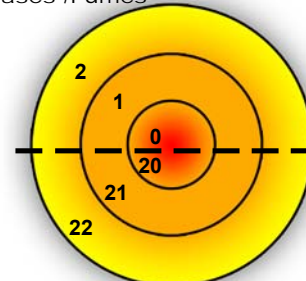
#### DUST

ZONE 20: Location where an explosive atmosphere in the form of a cloud of combustible dust is present in the air continuously, or over extended periods of time, or frequently.

ZONE 21: Location where an explosive atmosphere in the form of a cloud of combustible dust may occasionally form in the air during operation.

ZONE 22: Location where an explosive atmosphere in the form of a cloud of combustible dust is not likely to form in the air during normal operation, or should such a formation occur, is nonetheless only of short duration.

#### Gases /Fumes



#### Dust

- Continuous hazard
- Hazard present during normal operating conditions
- Limited hazard in the event of failure of a system (limited in time)

### 3- Definition of markings on ATEX products

Since July 1<sup>st</sup>, 2003, all Ex products must satisfy the requirements of the directive ATEX 94/9/CE

■ The new markings on Ex products are defined as follows (example for XDE transmitter):



= Specific marking relative to protection against explosions

① II = Device group symbol

② 1 = Category of devices determining utilization area

③ GD = Type of atmosphere, gas (G) and /or dust (D)

④ Ex = Marking satisfies standards CEN/CENELEC (European)

⑤ ia = Protection mode

⑥ IIB = Surface industries (II) and gas subdivision (B)

⑦ T5 = Temperature class

Ex iaD A20 T100°C = Maximum test temperature

LCIE 07 ATEX 6008 X = LCIE: Laboratory certifying approval in 2007, No. 6008

■ The tables below explain the ATEX marking:

Device group ①

Device group	Application
Group I	Electrical devices intended for use in firedamp mines => Protection against firedamp
Group II	Electrical devices intended for all other explosible atmospheres => Protection against explosions

ATEX classification ② ③

Explosive atmosphere	Permanent presence		Intermittent presence		Episodic presence	
Zones	0	20	1	21	2	22
Category of equipment	1		2		3	
Type of atmosphere	G	D	G	D	G	D

G = Gas  
D = Dust

Identification of various standards ④

Marking	Definition	Updating of markings
<b>Ex</b>	CEN/CENELEC marking (European Standardisation Committee)	Mandatory up to March 2007

## Gas protection modes 5

(standards given for information, currently being modified)

(General requirements EN 50014 - CEI 60079-0)

Protection mode		Standard	Basic principle	Applicable in ZONE		
				0	1	2
Enhanced safety	"e"	EN 50019 CEI 60079-7	The components inside the enclosure must not produce arcs, sparks or dangerous temperatures under normal utilization conditions. The enclosure must be tight to IP 54 and withstand impacts.		●	●
Explosion proof	"d"	EN 50018 CEI 60079-1	The extremely heavy duty envelope contains the explosion inside the device. The explosion proof seals of the device prevent any propagation of the flame outside the enclosure. The seals are regularly serviced.		●	●
Association of above two modes	"d+e"		The envelope of the device is in explosion proof protection mode and the enclosure for the connectors is in enhanced safety mode. This allows for using type "e" cable glands alone.		●	●
Internal overpressure	"p"	EN 50016 CEI 60079-2	A pressurized gas is introduced in the enclosure to prevent the possibly-explosive surrounding atmosphere from entering the enclosure 29/06/2007.		●	●
Intrinsic safety	"i"	EN 60079-11 CEI 60079-11	The actual design of the circuit, where the energy is limited at the entry by a Zener barrier or a galvanic insulator makes it impossible for arcs or electrical sparks to form, subdivided into "ia" (resists 2 defects: suitable for zone 0), and "ib" (resists 1 defect: suitable for zones 1 and 2).	●	●	●
Immersion in oil	"o"	EN 50015 CEI 60079-6	The material or the electrical circuit is immersed in oil. The explosive mixture is located above the liquid and cannot be ignited by the electrical circuit.		●	●
Powdery filler	"q"	EN 50017 CEI 60079-5	For this protection mode, all the electronics is encapsulated in an inert powdery material to prevent electrical arcs or electrical sparks.		●	●
Encapsulation	"m"	EN 50028 CEI 60079-18	For this protection mode, all the electronics is encapsulated in an insulating material to prevent electrical arcs or electrical sparks.		●	●
Zone 2	"n"	EN 50021 CEI 60079-15	This protection mode is only suitable for devices intended for zone 2 where the risk of explosion is low. It combines the enhanced safety mode "e" with lower protection requirements.		●	●
"i" system	SYST	EN 50039 CEI 60079-25	Design and use of a product implementing protection by intrinsic safety.		●	●

## Gases and fumes sub-division 6

(non-exhaustive list)

CLASSE IIA	CLASSE IIB	CLASSE IIC
<b>Propane</b> <b>Ethane</b> <b>Butane</b> <b>Benzene</b> <b>Pentane</b> <b>Heptane</b> <b>Acetone</b> <b>Hexane</b> <b>Methanol</b> <b>Ethanol</b> <b>Paint thinners</b> <b>Natural gas</b>	<b>Ethylene</b> <b>Ethyl ether</b> <b>Cyclopropane</b> <b>Butadiene 1-3</b> <b>Propylene oxide</b> <b>Ethyl oxide</b>	<b>Acetylene</b> <b>Hydrogen</b> <b>Carbon disulfide</b>

## Gas temperature classes 7

Temperature class	MAXIMUM surface temperature of electrical equipment	Ignition temperatures of FLAMMABLE materials
T1	450°C	> 450°C
T2	300°C	> 300°C
T3	200°C	> 200°C
T4	135°C	> 135°C
T5	100°C	> 100°C
T6	85°C	> 85°C

The maximum temperature of an equipment must always be less than the ignition temperature of the surrounding atmosphere.

## 4- Product features

### 4.1 Transmitter XDE

The transmitter comes in 3 housing versions: 6 function buttons, 8 function buttons or 10 function buttons. Each version also has a «On/Horn» button and an emergency stop palm switch.

The three versions are characterised by a modular design allowing installation, in each button position, of 6 different types of function buttons, such as:

- One-step pushbutton (single speed)
- Two-step pushbutton (double speed)
- Rotary switch with 2 fixed positions
- Rotary switch with 3 fixed positions
- Rotary switch with 3 positions with automatic return
- Electronic switch with 3 fixed positions

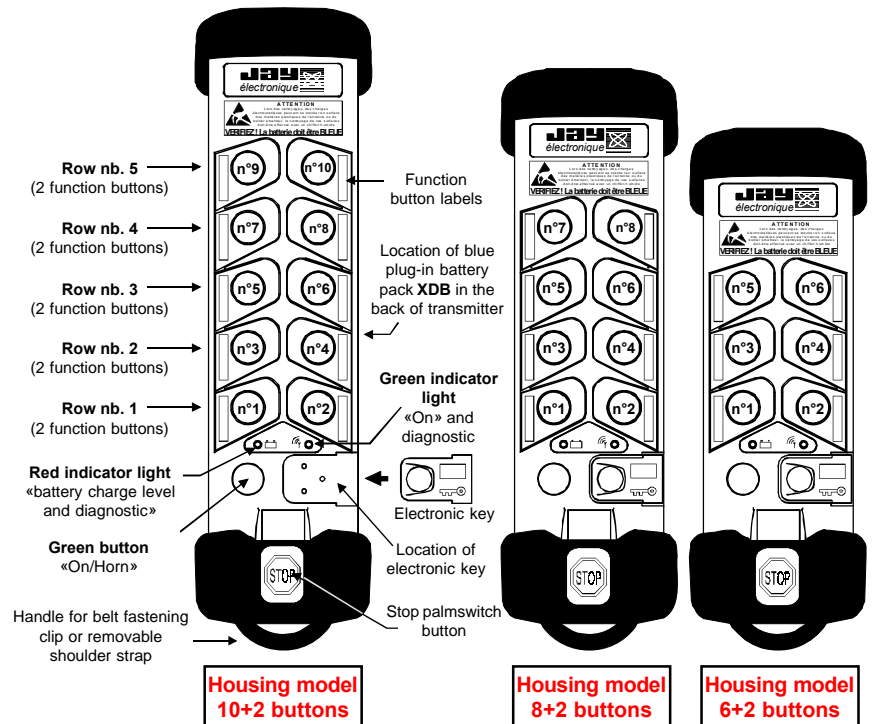
Two parameters can be easily adapted to the environment by a trained operator :

- Operating radio frequency
- Duration of temporization for «dead man» function (Automatic shutdown of remote control in case of prolonged non use)

These operations are performed by procedures implementing buttons nb.1, nb. 2, nb. 3, the emergency stop palm switch and the «On/Horn» button, with no need to open the transmitter or receiver.

The change of parameter can be however locked.

The electronic key contains all the parameters of the remote control, it is possible to use an auxiliary transmitter only with the electronic key and a validation procedure.

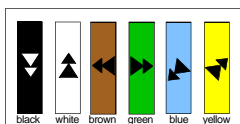


### 4.2 XDE transmitter function button labels

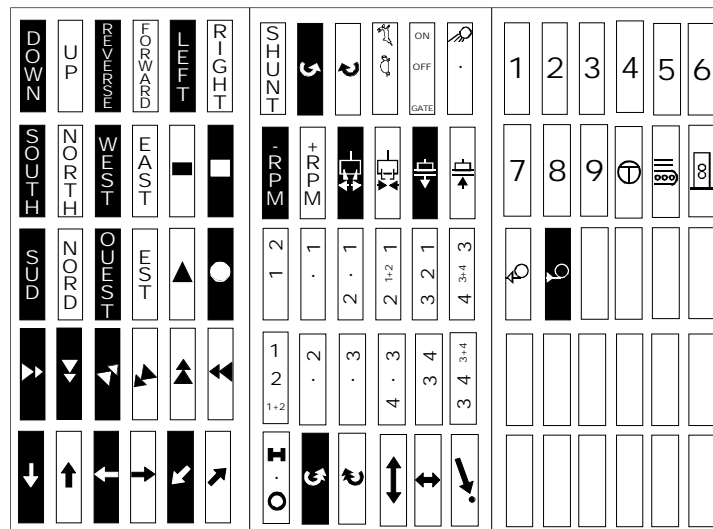
The various button functions are identified by means of adhesive labels placed in the recesses provided in the transmitter unit housing at each button location.

The labels are supplied in the form of sheets with the various labels you will need for your application. Simply choose the labels corresponding to your configuration.

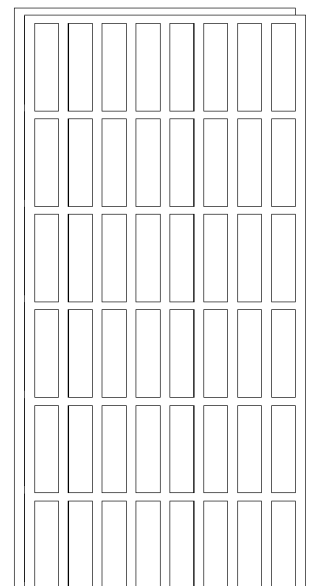
Reference: \*  
**UWE202**  
Kit of 6 colored labels, «movements», for double speed pushbuttons (2 steps)



Reference: \*  
**UWE207**  
Kit of 90 b/w labels «movements, special and customization functions» for pushbuttons and switches



Reference: \*  
**UWE205**  
Kit of 48 white blank labels, «customization» + 48 transparent protecting labels.



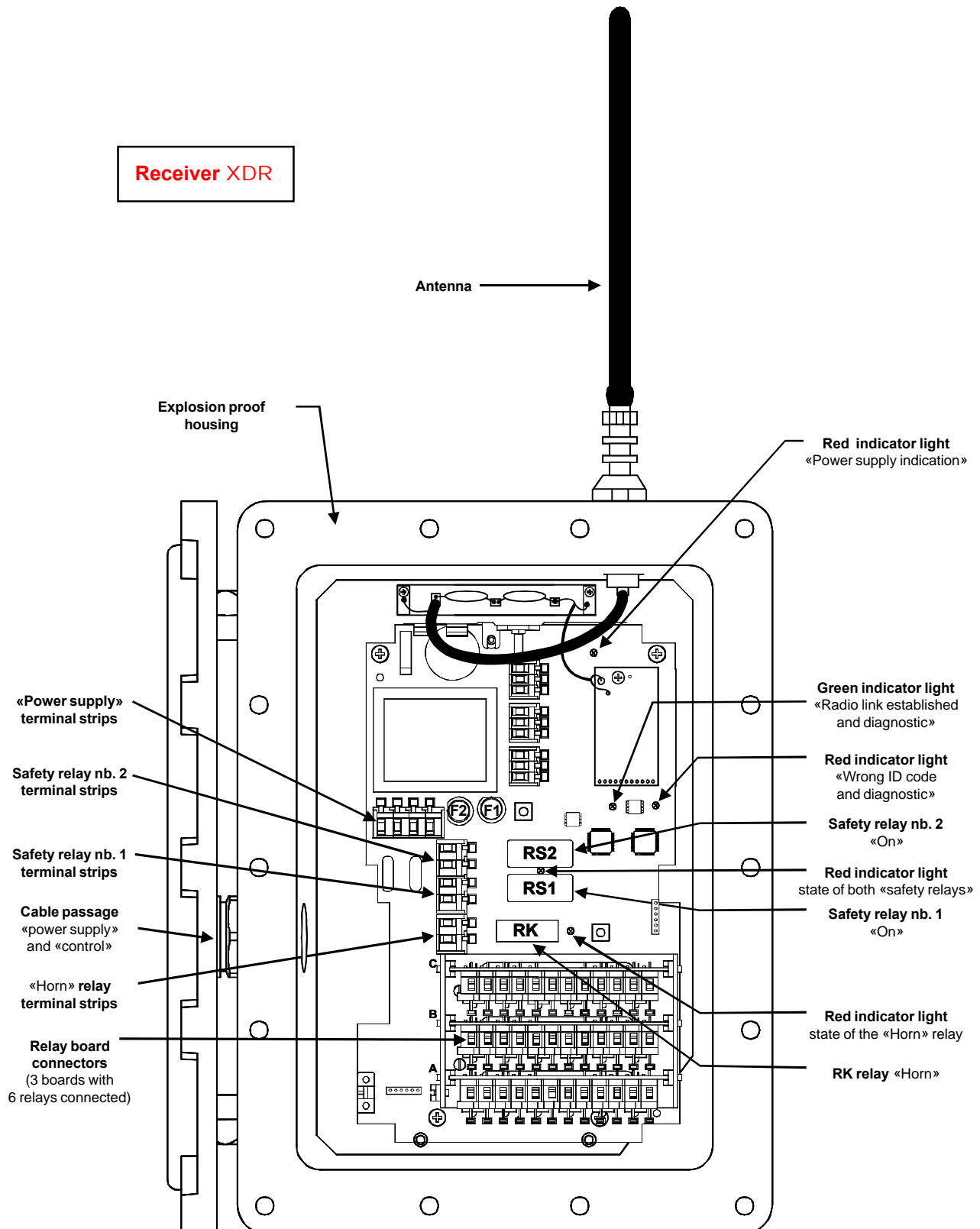
\* = Label sheets provided as standard supply with XDE transmitter

## 4.3 Receiver XDR

The receiver comprises a basic board on which **3 boards with 6 control relays** are connected.

The basic board systematically comprises:

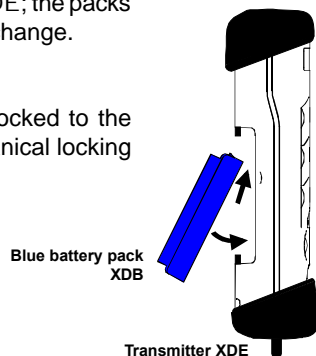
- **1 «Horn» relay**  
(active when the transmitter «On/Horn» button is pressed, not auto-maintained)
- **2 safety relays**  
(active when the transmitter «On/Horn» button is pressed, auto-maintained until passive or active stop)



## 4.4 Battery pack XDB and charger UCC•

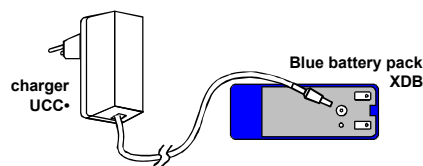
The blue battery pack XDB connects on the back of the transmitter XDE; the packs are thus quick and easy to change.

The battery pack is safely locked to the transmitter back by a mechanical locking system.



The blue battery pack XDB is re-chargeable using the charger UCC•.

**The charging operation must be performed outside the ATEX area.**



The indicator light on the blue battery pack allows you to monitor its charge status:

**Orange:** fast charge

**Green:** slow and holding charge (level > 60%)

## 5- Safety aspects

The XD remote controls implement numerous safety features, in particular:

### Transmitter / receiver communication safety features:

- Permanent radio link : by its non-directional design and insensitivity to the presence of obstacles, the operator is protected from exposure to handling risks during precision manoeuvres and movements.
- Each transmitter+receiver pair has its own specific identity code.
- Hamming distance (minimum number of bits that differ between 2 messages that are different) of 4.

### Receiver safety features:

- A passive shutdown device shuts down the system if the radio link is jammed.
- Category 3 safety per EN 954-1 is ensured by redundant control of the emergency stop circuit and use of guided contact safety relays.
- Contradictory commands can be interlocked electrically.
- Use of an explosion proof housing and an intrinsic safety solution for compliance with ATEX rules in accordance with marking indicated.

### Functional safety features:

- Start-up sequences are implemented to ensure safe operation by a trained, experienced operator.
- 55 ms response time compatible with the movement speeds of equipment controlled.

### Transmitter safety features:

- An active priority general shutdown command is generated when the «stop palmswitch button» is pressed.
- An electronic key limits access to the system to authorised persons only.
- An indicator light indicates an alarm in the event of an insufficiently charged battery.
- A «dead man» function shuts down the transmitter after a pre-programmed time period (1 to 98 mn or 1 to 99s) when no controls have been generated. This function can be disabled at any time to meet specific needs.
- Buttons protected mechanically against unintentional actions.
- Use of an intrinsic safety solution for compliance with ATEX rules in accordance with marking indicated.

## 6- Programmable radio frequencies

433-434 MHz Bands

Radio channel	Frequency MHz
01	433.100
02	433.125
03	433.150
04	433.175
05	433.200
06	433.225
07	433.250
08	433.275
09	433.300
10	433.325
11	433.350
12	433.375
13	433.400
14	433.425
15	433.450
16	433.475

Radio channel	Frequency MHz
17	433.500
18	433.525
19	433.550
20	433.575 (1)
21	433.600
22	433.625 (1)
23	433.650
24	433.675 (1)
25	433.700
26	433.725 (1)
27	433.750
28	433.775 (1)
29	433.800 (2)
30	433.825 (1) (2)
31	433.850 (2)
32	433.875 (1) (2)

Radio channel	Frequency MHz
33	433.900 (2)
34	433.925 (1) (2)
35	433.950 (2)
36	433.975 (1) (2)
37	434.000 (2)
38	434.025 (1) (2)
39	434.050 (2)
40	434.075 (2)
41	434.100 (2)
42	434.125 (2)
43	434.150 (2)
44	434.175 (2)
45	434.200 (2)
46	434.225 (2)
47	434.250 (2)
48	434.275 (2)

Radio channel	Frequency MHz
49	434.300 (2)
50	434.325 (2)
51	434.350 (2)
52	434.375 (2)
53	434.400 (2)
54	434.425 (2)
55	434.450 (2)
56	434.475 (2)
57	434.500 (2)
58	434.525 (2)
59	434.550 (2)
60	434.575 (2)
61	434.600 (2)
62	434.625 (2)
63	434.650 (2)
64	434.675 (2)

869 MHz Band

Radio channel	Frequency MHz
01	869.9875
02	869.9625
03	869.9375
04	869.9125
05	869.8875
06	869.8625
07	869.8375
08	869.8125
09	869.7875
10	869.7625
11	869.7375
12	869.7125

Adjacent intervals : 0,025 MHz

(1)= List of frequencies available for Denmark

(2)= List of frequencies available for Singapore

## 7- Technical characteristics

### 7.1 Transmitter XDE

ATEX characteristics
<b>Utilization zones:</b> Zones 0, 1, 2, 20, 21 and 22
<b>Protection mode:</b> intrinsic safety
<b>Markings:</b> <div> <div> <div>Ex</div> <div>II 1 GD</div> </div> <div> <div>Ex ia IIB T5</div> </div> <div> <div>Ex iaD A20 T100°C</div> </div> <div> <div>LCIE 07 ATEX 6008 X</div> </div> <div> <div>WARNING – POTENTIAL ELECTROSTATIC CHARGE</div> </div> <div> <div>HAZARD – SEE INSTRUCTIONS</div> </div> </div>
Mechanical, functional and environmental characteristics
<b>Housing:</b> ABS Choc, yellow - IP65 - Mechanical button protection
<b>Weight (with battery pack)</b> 6 function buttons: 400 g 8 function buttons: 450 g 10 function buttons: 490 g
<b>Dimensions</b> 6 function buttons: 70x53x220 mm 8 function buttons: 70x53x245 mm 10 function buttons: 70x53x276 mm
<b>Operating temperature range</b> -20°C to +50°C
<b>Storage temperature range (without battery pack):</b> -30°C to +70°C
<b>Storage temperature range (with battery pack):</b> -30°C to +35°C
Electrical and radio characteristics
<b>Power supply:</b> Plug-in Li ion battery
<b>Endurance transmit time/buttons typical average use (at +25°C)</b> Frequency 433-434MHz bands: 24 hours / 50% transmit time Frequency 869MHz band: 20 hours / 50% transmit time
<b>Transmit frequency</b> 64 user-programmable in 433-434MHz bands (see list on page 7) 12 user-programmable in 869MHz band (see list on page 7)
<b>Transmit power:</b> <10 mW (license not required) built-in antenna
<b>Modulation :</b> FM
<b>Average range (XDR with antenna VUB084) (1)</b> 100 m in typical industrial environment 300 m in unobstructed area
Functional characteristics
<b>Functions</b> 6 different kinds of function buttons : - One-step pushbutton (single speed) <b>"BPSV"</b> ① - Two-step pushbuttons (double speed) <b>"BPDV"</b> ①,2 - rotary switch with 2 fixed positions <b>"COM2"</b> ③ - rotary switch with 3 fixed positions <b>"COM3"</b> ③ - rotary switch with 3 positions with auto. return <b>"COM3R"</b> ③ - electronic switch with 3 fixed positions <b>"BPTR"</b> ④ 1 pushbutton "On/Horn" 1 active priority emergency stop palmswitch 1 electronic key
<b>"Dead man" function</b> Time is user-programmable
<b>Indicator lights</b> 1 red "battery level" and diagnostic indicator light 1 green "On" and diagnostic indicator light

### 7.2 Battery pack XDB

Mechanical, functional and environmental characteristics
<b>Housing :</b> ABS Choc, blue, plug-in - IP40
<b>Dimensions :</b> 40x96x23 mm
<b>Storage temperature range:</b> -30°C to +35°C
<b>Slow charge temperature:</b> 0°C to +45°C
<b>Fast charge temperature:</b> 0°C to +35°C
<b>Complete charge time:</b> 7 hours
<b>Resulting endurance in accordance with partial charges (at +20°C)</b> 10 min. of charging provide around 1 hour of endurance (utilization at 100%) 1 hour of charging provides around 8 hours of endurance (utilization at 100%) 6 hours of charging provide around 12 hours of endurance (utilization at 100%)
<b>Indicator lights</b> - 1 indicator light on battery pack (charging) <b>Orange</b> = fast charge <b>Green</b> = slow and holding charge - 1 red indicator light on transmitter (battery low)
<b>Charge voltage:</b> 5 VDC (by charger UCC*)

### 7.3 Receiver XDR

ATEX characteristics
<b>Utilization zones:</b> Zones 1, 2, 21 and 22
<b>Protection mode:</b> Explosion proof + intrinsic safety
<b>Markings:</b> <div> <div> <div>Ex</div> <div>II 2 GD</div> </div> <div> <div>Ex dia IIB T6</div> </div> <div> <div>Ex tD A21 T80°C</div> </div> <div> <div>LCIE 07 ATEX 6034 X</div> </div> <div> <div>WARNING – DO NOT OPEN WHEN ENERGIZED</div> </div> <div> <div>WARNING – DO NOT OPEN WHEN AN EXPLOSIVE</div> </div> <div> <div>ATMOSPHERE MAY BE PRESENT</div> </div> </div>
Mechanical and environment withstand characteristics
<b>Housing</b> Aluminium alloy – grey RAL7005 IP65
<b>Weight</b> 20 kg (approx.)
<b>Dimensions</b> 280x370x180 mm (Not including antenna)
<b>Operating temperature range</b> -20°C to +40°C
<b>Storage temperature range</b> -30°C to +70°C
<b>Cable lead-out</b> 1 PE ¼" metal, with 3 seals 15-18, 18-21 and 21-24 mm
<b>Connection</b> Spring-type terminal strips for 0.08² to 2.5² section wires
Electrical and radio characteristics
Characteristics complying with ETS 300 220
<b>Frequency</b> 64 programmable frequencies in 433-434 MHz bands (see list on page 7) 12 programmable frequencies in 869 MHz band (see list on page 7)
<b>Sensitivity</b> < -100dBm
Electrical characteristics
<b>Power supply and consumption (2)</b> (with 2 safety relays and 10 control relays pulled in) <b>DC version</b> - 12VDC, 0 to +25%, 675mA and 188mA when idle - 24VDC, -15% to +20%, 675mA and 188mA when idle <b>AC version n°1</b> - 24VAC, -15% to +10%, 850mA - 48VAC, -15% to +10%, 400mA <b>AC version n°2</b> - 115VAC, -15% to +10%, 180mA - 230VAC, -15% to +10%, 85mA
<b>Control</b> 1 "Horn" relay + 18 function relays
<b>Safety</b> 2 relays with linked and guided contacts
<b>Outputs</b> Independent NO relays - Category DC13 0,5A / 24VDC , AC15 2A / 230VAC - Max. breaking capacity 2000VA - Max. current 8A (control relay), 6A (safety relays) - Min. current 10 mA (12 Vmin.) - Max. voltage 250VAC - Service life under 230VAC, 70VA, cosphi=0,75 : 3x10 <sup>6</sup> cycles
<b>Response time</b> - On start-up: 0,5s max. - On control: 55 ms max.
<b>Active shutdown time</b> 145 ms max.
<b>Passive shutdown time</b> 1,1 s max.
<b>Indicator lights</b> - 1 red "power on" indicator light - 1 red + 1 green indicator lights for diagnostic - 1 red status indicator light per relay
<b>Protections</b> Power supply: - Against polarity inversions for DC versions - Against overcurrents by fuse

(1)= Range will vary according to environment conditions of transmitter and reception antenna (metal frameworks, walls ... ).  
 (2)= The number of control relays controlled simultaneously is limited to 10 relays.

## 7.4 Compatibility with our XD, UD and UR remote controls

A transmitter XDE can be operated with a receiver UDR of our UD series (see sales brochure E330) or with a receiver URR of our UR series (see sales brochure E730).

A transmitter UDE of our UD series (see sales brochure E330) or a transmitter URE of our UR series (see sales brochure E730) can be operated with a receiver XDR.

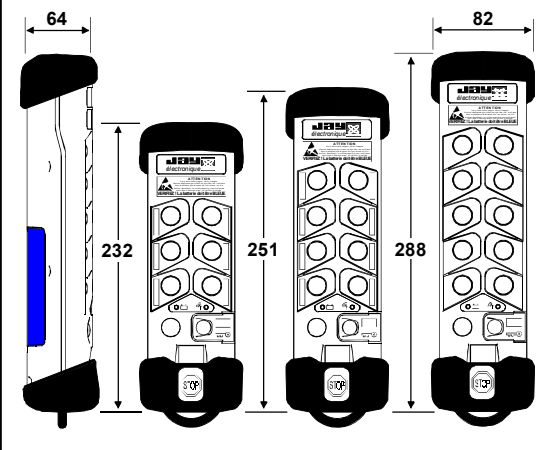


**This utilization configuration implies that the transmitter or receiver of the UD or UR series is not located, under any circumstances, in an explosible atmosphere. Only the transmitter or receiver of the XD series (ATEX approved) can be used in this type of hazardous environment.**

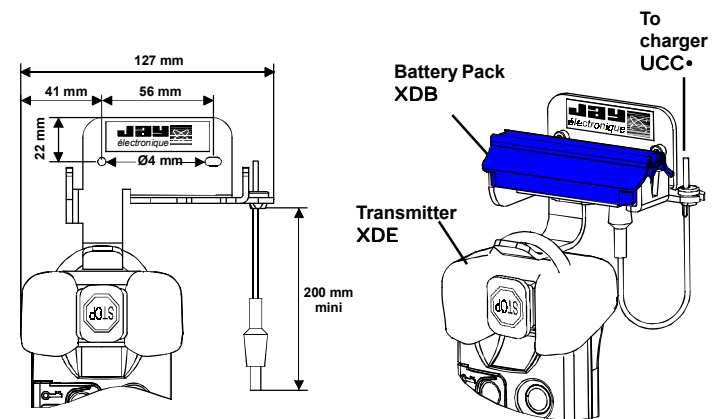
## 8- Dimensions

### 8.1 Transmitter XDE

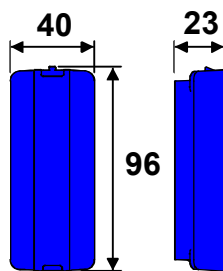
(6+2, 8+2 and 10+2 button housing models)



### 8.2 Wall bracket UDC1



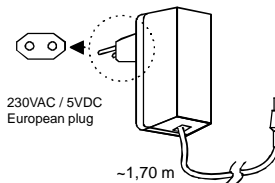
### 8.3 Battery pack XDB



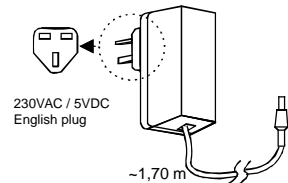
### 8.4 Chargers UCC•

(to recharge battery pack XDB)

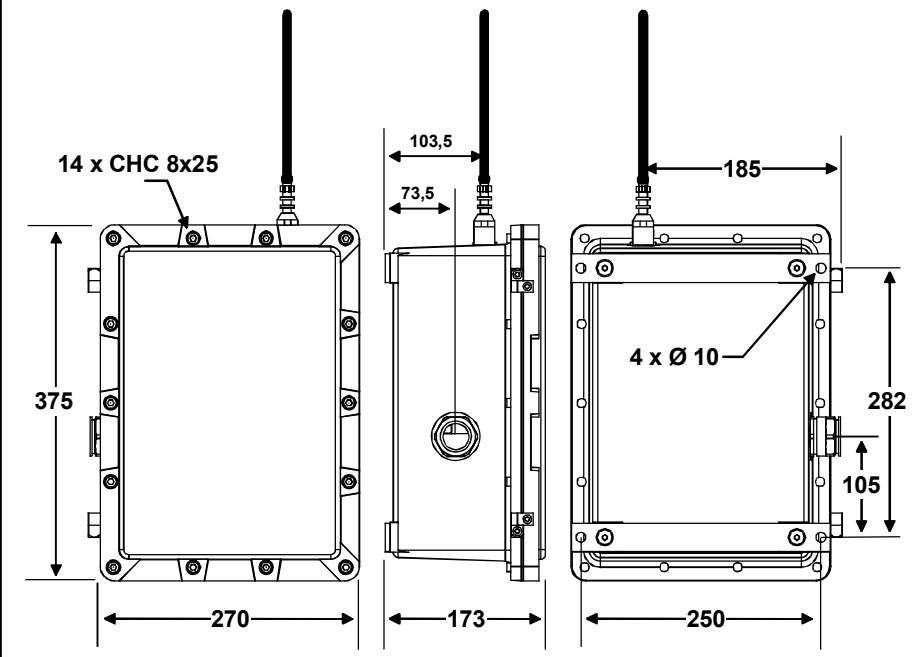
#### Charger UCCU



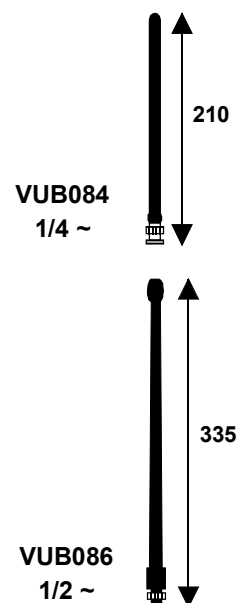
#### Charger UCCW



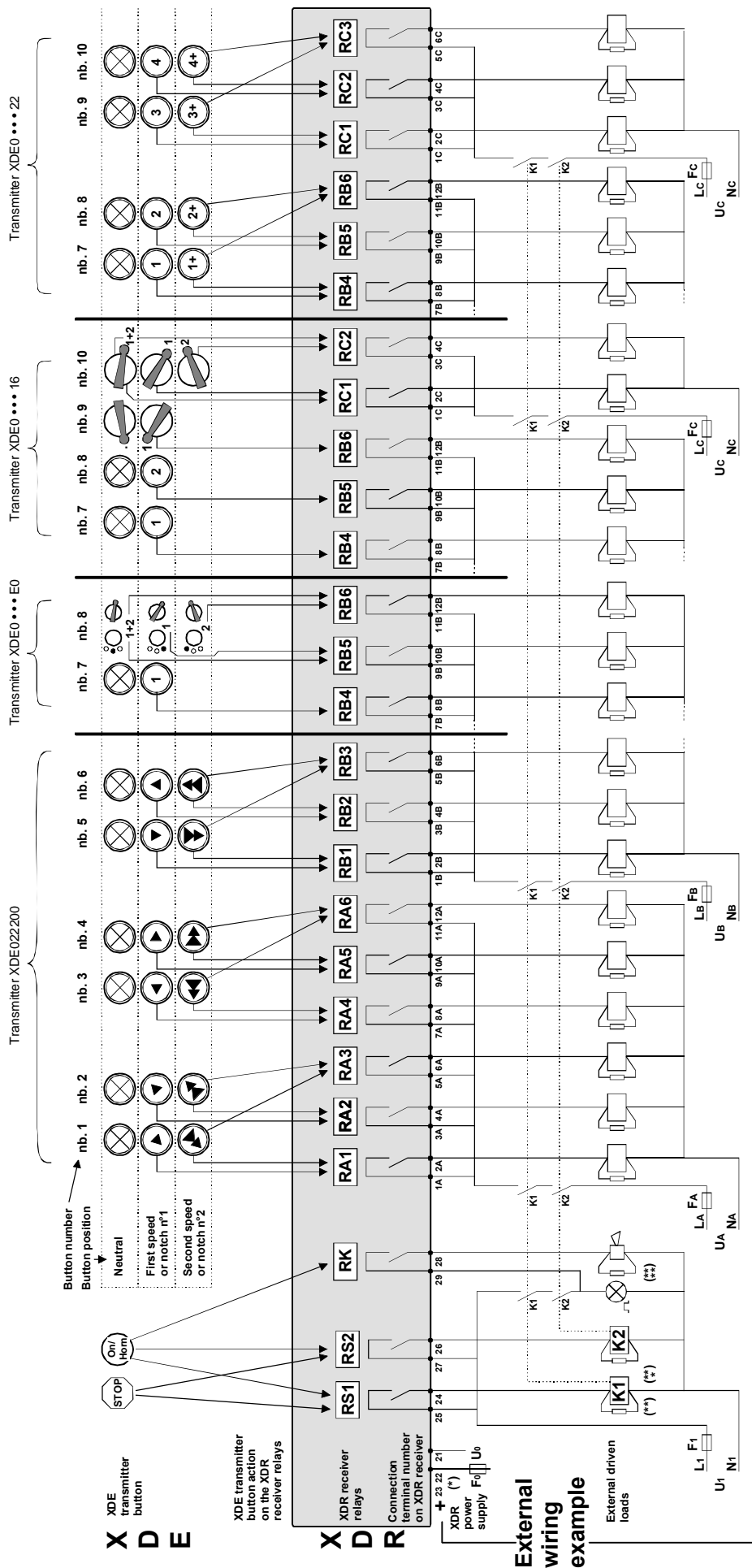
### 8.5 Receiver XDR



### 8.6 Antennas VUBO••



## 9- Example of wiring diagram



Safety relays RS1 and RS2 are switched on by the pushbutton "On/Hom", and held in position until the emergency stop palm switch is pressed (active shutdown) or until the loss of the radio transmission (passive shutdown).

# 10- Selection guide, references for ordering

## 10.1 Transmitter XDE

**Type of function buttons (2) on first row (starting from bottom of transmitter)**

**Type of function buttons (2) on second row**

**Type of function buttons (2) on third row**

**8+2 or 10+2 button version:**  
Type of function buttons (2) on fourth row  
or  
**6+2 button version:**  
write 0 (zero)

**Type of communication and version :**  
0 = Radio 433-434MHz bands  
2 = Radio 433-434MHz bands without electronic key (1)  
A = Radio 869MHz band  
C = Radio 869MHz band without electronic key (1)

**10+2 button version:**  
Type of function buttons (2) on fifth row  
or  
**8+2 button version:**  
write 0 (zero)  
or  
**6+2 button version:**  
write 0 (zero)

**(2)= Types of function buttons per row :**

1 = BPSV, BPSV    8 = BPSV, COM3R

2 = BPDV, BPDV    9 = COM2, COM3R

3 = BPSV, COM2    A = COM3, COM3R

4 = BPSV, COM3    B = COM3R, COM3R

5 = COM2, COM2    C = Cover, cover

6 = COM2, COM3    D = BPSV, BPTR

7 = COM3, COM3    E = COM2, BPTR

Contact us concerning programming restrictions due to the use of switches on row 1 and row 2.

(1)= Only for auxiliary transmitter.

### Example : XDE012600

Radio transmitter XDE (433-434MHz bands), 6+2 button housing model, with electronic key, button configuration: 1<sup>st</sup> row BPSV-BPSV, 2<sup>nd</sup> row BPDV-BPDV, 3<sup>rd</sup> row COM2-COM3, supplied with label sheets ref.: **UWE202** and **UWE207**.

## 10.2 Receiver XDR

**Power supply:**  
4 = 12 - 24 VDC  
A = 24 - 48 VAC  
B = 115 - 230 VAC

**Type of communication:**  
0 = Radio 433-434MHz bands  
A = Radio 869MHz band

**Match-up programming Transmitter XDE buttons – Receiver XDR relays:**  
Number of relays controlled by type BPDV button pairs (double-action pushbuttons) of transmitter  
1 = 3 relays controlled or no BPDV on transmitter  
2 = 4 relays controlled

**Match-up programming Transmitter XDE buttons – Receiver XDR relays:**  
Type of control for BPTR, COM3, COM3R (3-position selector switch) buttons of transmitter  
1 = Type: 1/1 + 2/2 or no COM3/COM3R/BPTR on transmitter  
2 = Type: 1/OFF/2  
3 = Type: 1/2/1+2

**Interlocking programming between pushbuttons (BPSV or BPDV type) nb. 1 and nb. 2, nb. 3-nb. 4, and nb. 5-nb. 6:**  
0 = no interlocking or COM (selector switch) on each row  
1 = interlocking with deactivation of the output relays  
2 = interlocking with priority to Left button (i.e. button Nb. 1, Nb. 3 and Nb. 5)  
3 = interlocking with priority to Right button (i.e. button Nb. 2, Nb. 4 and Nb. 6)

### Example : XDR0CB00 - 012

Radio receiver XDR (433-434MHz bands), 18+3 relays (18 function relays + 2 safety relays + «Horn» relay), 115-230VAC power supply, without programmed interlocking, without BPDV on transmitter; BPTR, COM3 and COM3R buttons, if present, on transmitter are type 1-OFF-2.

### ◆ Accessories for transmitter XDE:

Reference	Description
UCCU	Charger 230VAC(european plug)/5VDC (for battery pack charging) (3)
UCCW	Charger 230VAC(english plug)/5VDC (for battery pack charging) (3)
XDB	Plug-in blue battery pack (4)
UDC1	Wall bracket for stowing and battery pack charging when idle
UDWE22 X	Programmed electronic key (key number to be specified) (4)
UWE202	Kit with 6 colour "movement" labels for two-step pushbuttons (double speed) (4)
UWE205	Kit with 48 white blank labels for customised marking
UWE207	Kit with 90 black/white "movement, special functions and customisation" labels for selector switches and pushbuttons (4)

### ◆ Accessories for receiver XDR:

Reference	Description
VUB084	1/4 wave antenna straight, BNC (4)
VUB086	1/2 wave antenna straight, BNC
VUB060	90° BNC elbow for antenna <b>VUB084</b> or antenna extension (5)
VUB105	2 m antenna extension BNC + non-insulated bracket (6)
VUB125	5 m antenna extension BNC + non-insulated bracket (6)
VUB131	10 m antenna extension BNC + non-insulated bracket (6)
UWE001	Adhesive 2-way directional arrows, colour coded, for travelling crane
UWE002	Adhesive 4-way directional arrows, colour coded, for travelling crane (4)
UDWR12	Common wiring accessory (4)

(3)= **CAUTION: the blue battery pack XDB must only be charged outside the ATEX zone.**

(4)= 1 accessory supplied with product

(5)= Not suitable for direct connection to antenna Ref.: **VUB086**; in this case, use an intermediate extension type **VUB1**..

(6)= When using an antenna extension, make sure that the structure on which the support bracket is mounted has the same equipotential as the structure on which the receiver unit is mounted.

The products presented in this document are subject to change. Product descriptions and characteristics are not contractually binding.  
Please go to our internet site [www.jay-electronique.fr](http://www.jay-electronique.fr) to download the most recent updates to our documentation.

**E810 E - 0707**



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